

REMARKS

This is in response to the Office Action dated October 6, 2004. Non-elected claims 11-18 have been canceled, without prejudice in view of the Restriction Requirement. New claims 19-22 have been added. Thus, claims 1-10 and 19-22 are now pending.

Claim 1 stands rejected under 35 U.S.C. Section 102(b) as being allegedly anticipated by Gaynes. This Section 102(b) rejection is respectfully traversed for at least the following reasons.

Claim 1 as amended requires "multiple semiconductor chips vertically stacked on top of each other, wherein: each of the semiconductor chips includes electrode pads, and multiple through electrodes formed in a region within the electrode pads." Thus, it is clear from claim 1 that through electrodes are formed within electrode pads. As an example, Figs. 1 and 2(c) of the instant application illustrate a given electrode pad 2 having a plurality of different through electrodes [1, 11(1), and/or 12(1)] provided therein.

Gaynes fails to disclose or suggest the aforesaid underlined aspect of claim 1. For instance, Fig. 7 of Gaynes illustrates the manner in which Gaynes provides via-to-via connections, pad-to-pad connections, and via-to-pad connections. Referring to chips 30b and 30c, through holes are provided to the right of the pads. None of the through holes in Fig. 7 of Gaynes is formed through or within a pad. Thus, Gaynes fails to disclose or suggest through electrodes formed within electrode pads as required by claim 1. As a result, Gaynes is unable for example and without limitation to effect a reduction in size of the chip-stack semiconductor device.

Claim 20 requires that a plurality of different through electrodes are provided in a first electrode pad so that when viewed from above the plurality of through electrodes in the first pad are located inside a periphery of the first pad. For example, see Figs. 2(a)-2(e) of the instant

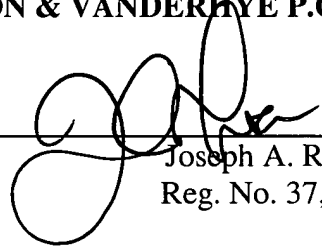
application. As an example, Figs. 1 and 2(c) illustrate a given electrode pad 2 having a plurality of different through electrodes [1, 11(1), and/or 12(1)] provided therein. Gaynes clearly fails to disclose or suggest the aforesaid underlined aspect of claim 20. Gaynes fails to disclose or suggest any through electrode in a pad, let alone a plurality of through electrodes in a pad as called for by claim 20.

For at least the foregoing reasons, it is respectfully requested that all rejections be withdrawn. All claims are in condition for allowance. If any minor matter remains to be resolved, the Examiner is invited to telephone the undersigned with regard to the same.

Respectfully submitted,

NIXON & VANDERHYTE P.C.

By: _____



Joseph A. Rhoa
Reg. No. 37,515

JAR:caj
1100 North Glebe Road, 8th Floor
Arlington, VA 22201-4714
Telephone: (703) 816-4000
Facsimile: (703) 816-4100